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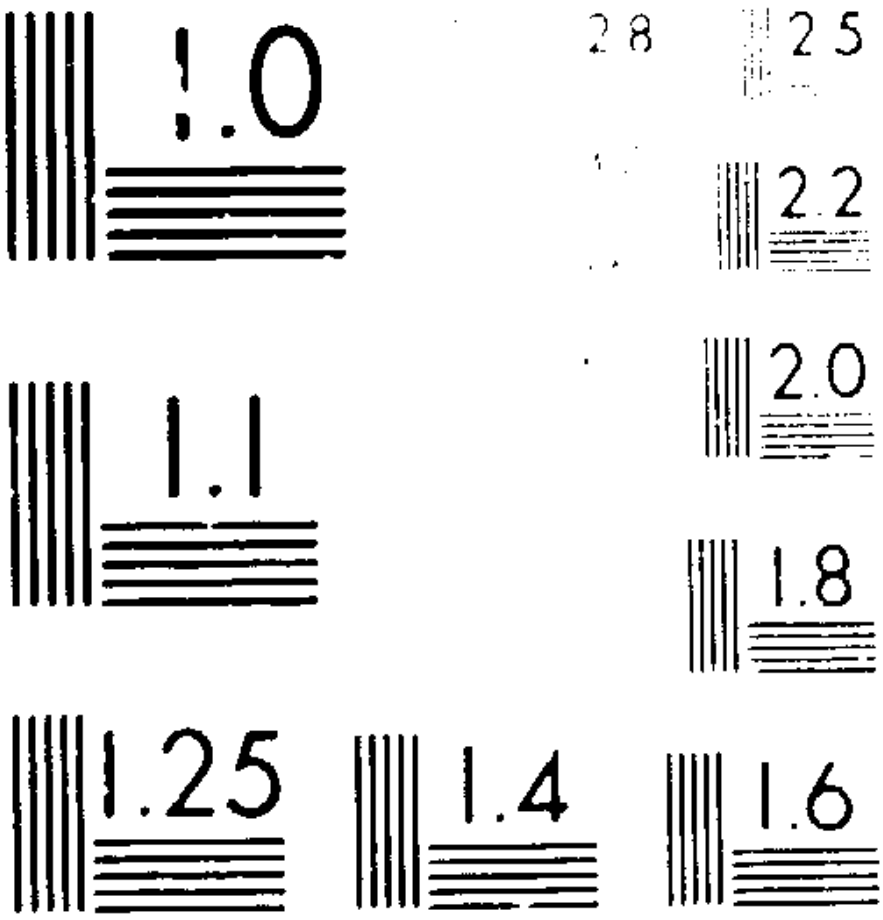
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Integrated Agro-Industry Development *

by

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INTEGRATED AGRO-INDUSTRY DEVELOPMENT

I. INTRODUCTION

UNIDO's experience during fourteen years assisting developing countries in the field of agro-industry, by means of field missions, expert group meetings, seminars, consultations etc., has made it possible to accumulate a large number of facts to enable the evaluation of potentialities and to point out the main constraints affecting this economic sector in developing countries.

From 1966 to 1970 which can be called the assessment period, UNIDO made several surveys, observations and studies which indicated that great losses existed, not only in the production, harvesting and post-harvesting of agricultural produce, but that large resources had been used to establish industrial plants which were not being properly operated due to various factors especially the inadequate supply of raw materials. In many cases modern slaughterhouses were producing at ten to fifteen per cent of their capacity due to the lack of animals to slaughter. Fruit and vegetable processing plants were not operating for more than a few months per year due to the shortage of raw materials; inadequate quality of fruit and vegetables caused the production of low quality products. In some cases the established plants were too modern and too large and in others they were small and obsolete. For one reason or another the great majority of the food processing plants operating in developing countries, except those under multi-national enterprises, were operating at a loss. This situation was the opposite of that existing in developed countries[1/] both under a market or planned economy where the food industry was expanding greatly and modernizing as a very dynamic sector[2/].

1/ Foreign food industry expansion, including its expansion into developing countries, has represented an important growth option to most of the leading firms, particularly for their more highly differentiated products (see "Studies on Effects of the Operations and Practices of Transnational Corporations" - United Nations Economic and Social Council publ. No. E/C.10/70 of 17 April 1980, page 7).

2/ Food processing is one of the world's principal manufacturing activities. In 1975, the world output of processed food and beverages was estimated at $695,000 billion directly employing 22.5 million persons. About 54 per cent of the industry's output was produced in developed economies, about 32 per cent in European centrally-planned economies and 14 per cent in developing countries.

(cont'd ....2)

The most indicative reason for the failure of the food industries in developing countries was the non-existance of a proper link between the market, agricultural production of raw materials and the processing plants. As a result the locally processed foods were too expensive and of too low a quality to compete with imported products and most of the developing countries were using large amounts of foreign currency to import food products which could be produced locally.

Making a detailed analysis of both the successful and unsuccessful food processing industries, UNIDO started to work out a concept of integrated agro-industry development which can be summarised as follows.

To establish a successful food processing plant needs proper planning from the market level to identify the most important products in demand, then to analyse the potentialities of the available agricultural resources, then afterwards to select the most suitable processing technology and finally the best means of storage and distribution of final products. Therefore, the integrated approach requires multidisciplinary planning which involves research and development, agronomy, economics, management, food processing technology etc. The model agro-industry should be not only in accordance with the physical constraints of soil, climatic conditions, type of products, but also should balance with the socio-economic conditions prevailing.

A basic constraint of an institutional nature which arose in planning agro-industry development has been to define the field of competence. Taking into account that integrated agro-industry development comprises all phases of the process, it is not possible, when planning, to isolate agriculture from processing or distribution[3/]. The planning requires a unified approach to be dealt with by a multidisciplinary team with only one concept. However, due to the traditional idea that food processing should be established to process

In addition, food industry affiliates in developing countries contribute about one quarter of the leading foreign food revenues of transnational corporations. (Source same as 1/ on page 1).

3/ The institutional separation between agriculture, industry and market distribution reflects both the colonial type of economy in which the colonies produced agricultural raw material to deliver as such to metropolitan countries and the plantations economy (coffee, cotton etc.) established in developing countries for the export of raw materials.

a surplus of agricultural raw materials, the modern approach is not easily understood and varied types of resistance exist and in most cases statements are made that the industry should become established only when raw materials are available to process. This idea is the reason for many failures in established food processing industries in developing countries. To establish industries on the basis of surplus agricultural raw materials is to start an enterprise to compete with the market for fresh agricultural produce and to subject it to all kinds of variations not only in price but also in quantity and quality of raw materials. In many cases the surplus which existed when the industrial plant was planned does not exist any more once it is established and the plant remains idle due to the shortage of raw materials; the prices generally go up and the processed products are no longer competitive. Also, in most cases the agricultural raw material does not have the basic characteristics required for processing.

Therefore, from the point of view of planning integrated agro-industry development, UNIDO's main activitiy has been to promote the concept that the planning should start from the market to define the demand and then to go back to agriculture to define the products to be produced. In many cases the planning starts when raw materials are not yet available and that agricultural development should be carried out to produce the proper raw materials to be processed. (Obviously, there are cases in which the agricultural development already exists, such as large plantations of cashew trees which were established mainly with the aim of reforestation, and the fruit is readily available; other cases also were found in which large plantations of tropical fruit existed, however, these are exceptions).

The difficulties of planning agro-industry development, however, goes further than that and questions are raised in respect of how to organize the plantations. There is a time duration between starting planting and the initial phase of producing. To establish the plantations implies large investment costs. Should the plantation, production, processing, distribution, research and development be under only one enterprise? This would imply a large capital investment which in many cases is not available from the local investors. In addition, the administration of large agro-industry enterprises is very complex and many failures are due to this constraint.

Due to the encountered constraints and changes in the world economy in the last few years UNIDO adjusted its approach to making it more realistic and adequate for the existing conditions in the developing countries. The new approach suggests that agro-industry development starts from small modules from which, by adding new production lines, the complex would be formed; in addition, integrated agro-industry should in most cases have its own energy source (this idea will be elaborated more later on in this paper).

In conclusion, UNIDO has been working continuously to promote the concept of integrated agro-industry development. UNIDO's message through a number of activities is already accepted by a large number of government and private sector authorities. Most of the country's development programmes place high priority on integrated agro-industry development; at the 2nd UNIDO Conference in Lima, it was unanimously recommended to make this sector one of the first priorities in UNIDO's activities; however, in real terms, the results obtained up-to-now are very limited.

II. EXPERIENCES

In order to clarify our approach and to indicate the ways and means in which integrated agro-industry can be stimulated the following examples are given.

In the South of Brazil a region exists of which the city of Pelotas is the centre. In that region a certain number of small plants were established to process temperate climate fruit and vegetables. Various plants are too small and all of them operate with a low level of technology, high losses, low quality products and low profitability. The available raw material is not of the ideal quality and the supply is not adequate. In co-operation with the industrialists and the Government, UNIDO is assisting in re-organizing the industry. A programme was created to improve the agricultural basis. The Government created special credit lines to expand the agricultural production and to ameliorate the quality of the produce. A small technological centre was established to give technical assistance to the processing plants, including the training of personnel. A programme was formulated to reorganize the industrial plants through merging the small ones into

large enterprises; also the programme envisages the modernization of the equipment and processing methods. It is expected that in five years the industry which was not competitive will be fully re-organized and entirely integrated with the research work, products, development, agricultural production to processing and distribution of final products. The plan envisages not only to rationalize the sector through mergers thus having a small number of large and profitable plants but also aims at raising the technological level of the plants to produce final products able to compete in the national market with imported products.

A plan to modernize this industrial sector was made having as the central point the establishment of research, development and extension services. The plan also envisaged to promote mergers among the smallest plants and a certain production specialization. Governmental actions were taken to rationalize agricultural production and transportation of the produce. programme is being successfully implemented and, in about four years will be completed. The result will be a smaller number of larger plants, modernized and integrated in a system which has a dynamic technological basis and a steady supply of raw materials, and therefore will be an economically, financially and technically-viable industry.

In this case, the starting point was the creation of a nucleus of a food processing and development centre able to assist the existing factories in their technological development and in the rationalization and modernization of the entire sector.

Another interesting experience on how Government action can stimulate the agro-industry development, also in Brazil, was the creation of an industrial promotion agency in the States of Minas Gerais[4/].

During the decade of the 1960's, agriculture in Minas Gerais grew at a rate of only 1.3% per year. In the early 1960's, growth was 2.7% per year, while during the late 1960's, a .5% negative yearly rate prevailed. During this period, agro-industry remained in a state of obsolescense, using rudimentary technology and producing basic products. Minas Gerais remained a producer of raw materials which either went to the fresh market or were exported to other states in Brazil. Nearly all manufactured food products were imported into the state.

4/ See Attracting Agribusiness to Brazil in Agribusiness Worldwide, February - March 1980, pages 30 to 37.

At this time, the Government of Minas Gerais was seeking assistance to accelerate economic development in the state through a programme of industrial and agricultural expansion.

The basic concept behind this Government programme was:-

To develop sound agro-industry requires a sound agriculture supplying raw materials, input suppliers servicing agriculture, processors utilizing farm outputs and markets for the production of the sector. Key to the success of any agro-industry is a stable supply of the right quality agricultural raw material; therefore, the studies made by the Industrial Development Institute (INDI) of the agro-industry sector went a long way to identifying the problems of the agricultural production sector. It was found that in most cases insufficient supplies of raw materials was the prime reason many agro-industries were not operating. This finding led to defining projects that would correct this situation and projects that not only produced raw material, but also stimulated production of raw materials by farmers and processed the raw materials. In other words, projects that integrated production, processing and marketing were recommended. Also, a very close working relationship was established with the Secretary of Agriculture in the state in order that agricultural production and agro-industry efforts were carried out in harmony and according to policy that would promote both objectives.

These efforts did bear fruit. Through the efforts of INDI in identifying problems within the agricultural and agro-industry sectors and working with the Secretary of Agriculture the agricultural sector in 1972-73 increased at the annual rate of 5.6% and at 6.2% in 1973-74 compared with the late 1960's, when a .5% negative yearly rate prevailed. Further, through the direct or indirect efforts of INDI, 61 new and 46 expansion projects of an agro-industry nature were established in that region.

The food processing industry of Angola is one of the most interesting cases to be analysed. As can be seen in the Table I, (page 17.) the production of processed food products in 1973 was not only highly diversified but supplied all the market and left a surplus for export. Now after the liberation war the production capacity was not being fully utilized and there were large imports of processed food products. There are several reasons to explain this situation, among them it could be mentioned that numerous equipment was destroyed during the war; that most of the qualified personnel both at the managerial and operational levels,

left the country and that the agricultural basis was disrupted. The industry was established in the last ten years prior to the liberation war, when Angola already had a local market large enough to encourage investment to produce food processing products for local consumption. The processing plants were perfectly linked with agriculture during the colonial period since this last sector was highly organized to produce raw materials for export and it was also easy to supply the needs of the industry.

Actually the whole sector is being re-organized under a new set-up of centralized economy and the food industry will work as a large company with a central body which will conduct the basic industrial policy. A new agricultural plan is under formulation in which the production of inputs for the processing industry will be mainly under this industrial sector. The same is with respect to the use of by-products and wastes. It must be pointed out that the rehabilitation programme is being implemented in co-operation with UNIDO and mostly under the programme of technical co-operation among developing countries (TCDC).

With respect to Mexico also a case can be mentioned on how agro-industry development can be stimulated by the Government in co-operation with international organizations such as UNIDO. Working with the Co-ordinating Direction of Agro-Industry from the Secretariat of Agriculture and Hydraulic Resources of the Mexican Government, a team of UNIDO experts made a plan for the agro-industry development of the Chiapas and Tabascos regions. About forty opportunities for establishing integrated food processing plants were identified, and a large programme to work out specific projects and the further establishment of the processing plants is being implemented. Also, the methodology developed for the Chiapas and Tabascos regions is being applied to plan the integrated agro-industry development of the whole of Mexico.

Along the same lines, a similar agro-industry development master plan is being formulated and implemented for the Government of Nigeria with UNIDO's co-operation.

One problem which was frequently encountered by UNIDO was to establish a modern, multi-purpose small plant to process fruit and vegetables in a profitable way. Most of the plants available on the

international market are too large and would not operate more than a few months per year in developing countries, and for that reason are uneconomical. However, it was found that in some more advanced developing countries small and efficient equipment was being produced. UNIDO is now promoting the establishment of three such small plants in Senegal, Mali and the Seychelle Islands.

For the Dominican Republic a similar programme is under implementation and six integrated food processing plants will be established.

The above mentioned are a few of a large number of experiences UNIDO has had and are mentioned only to point out UNIDO's understanding of the problems in developing countries and the main lines of action which could be suggested for the future activities towards integrated agro-industry development.

III. TRANSNATIONAL AND CENTRALIZED ECONOMIES FOOD PROCESSING ENTERPRISES

From the above experiences and taking into account the changes in the world economy and other facts, it is possible to come to a basic understanding of the need for an integrated agro-industry development approach and also to point out the basic conditions for the success of such enterprises.

In order to complement the analysis and to make it more realistic we are going to make a brief summary of the main policy lines of the transnational enterprises and, by means of comparing them with the available options of the national enterprises, some basic guidelines to be followed in agro-industry development will be worked out with a clear aim of serving the developing countries.

1. Most of the transnational enterprises engaged in food processing are also involved in manufacturing or services closely related to food industry activities (for example, canning production, fertilizers, land development and shipping).

2. A large part of the growth of the leading firms has been through mergers and acquisitions.

3. Product advertising is an important cost element and source of market power in the "brand name" food activities of leading firms.

4. The large transnational firms have narrowed internal growth in specific product lines of the food industry more and more to "brand name" products for which significant market shares can be built-up and protected through advertising and promotion.

5. Most of the transnational food processing enterprises do not have land, however, they have strict contracts with farmers who produce under contract and in one way or the other receive technical assistance.

From the above points it is clear that the transnationals are more interested in "brand name" products than in the staple foods although it is also increasing their involvement in the staple products[5/].

So far we considered basic aspects concerning the multi-nationals operating on a market economy. However also to be considered is another type of set-up of a centralized economy and the experience of Yugoslavia is of particular interest.

In Yugoslavia which is a socialist country, integrated agro-industry is highly developed and the quality of the products fairly competes in the international market. Within the socialist countries, the food industry of Yugoslavia is the one which more approaches the food industries of the western countries taking into account the diversification of food products, packaging etc. However, although the industry uses much Western technology, its set-up is completely different. Yugoslavia's food processing industry is based on large combines which produce a large part of agricultural raw materials and goes up to final product distribution not only through a proper chain of supermarkets but also, in many cases, comprises also hotels, restaurants, production of convenience

5/ It would be of interest to mention here that a transnational company which recently entered into the market of a developing country in the rice milling branch was faced with Government regulations on prices and, in order to avoid the price ceilings, contracted the services of a local institute to develop a new product namely Risotos in which the rice is packed with a tinned product such as shrimps, vegetables, etc. to be mixed with the rice. This new product is marketed outside the Government restrictions on rice prices.

food for hospitals and other institutions. The type of enterprise existing in Yugoslavia is self-management in which the board of elected directors decide on the investment, expansion and profit distribution. This type of organization is based on larger enterprises (combines) which belong to the Government.

In the next section some considerations on integrated agro-industry models suggested for developing countries will be presented.

IV. INTEGRATED AGRO-INDUSTRY MODEL FOR DEVELOPING COUNTRIES

Integrated agro-industry is a production organization which comprises all phases of production from soil to the marketing and distribution of processed products. Agro-industry does not necessary need to be under single ownership, the prerequisite is that the agriculture produces raw material in the quality, quantity and timing required by the processing industry.

The types of integrated agro-industry vary according to the market requirements of final products and with the available agricultural resources and also according to the economic set-up or ownership (there are co-operatives; combines under only one enterprise; contracts between farmers, industry and distribution organizations etc.).

The sizes of the integrated agro-industries vary according to the quantities of final products which can be absorbed by the market (local and export); it varies also in accordance with the capacity of farmers to produce the raw materials needed, and, with the capacity of the processing equipment.

Taking into account the constraints of size, level of technology, market etc., there are types of balanced integrated agro-industries in which the raw material produced by the agriculture, and the by-products and wastes are entirely absorbed resulting in self-sufficiency and viability in social, economic, technical and financial terms.

The model integrated agro-industry should also as much as possible be self-sufficient in energy.

The complex as a whole can be a viable one although some of its units may not be profitable.

The integrated agro-industry is a dynamic system with a basic nucleus upon which an operation is based. This nucleus can be a fruit or a root processing plant. From the initial plant the system expands by adding new processing lines, new raw materials, further processing stages etc.

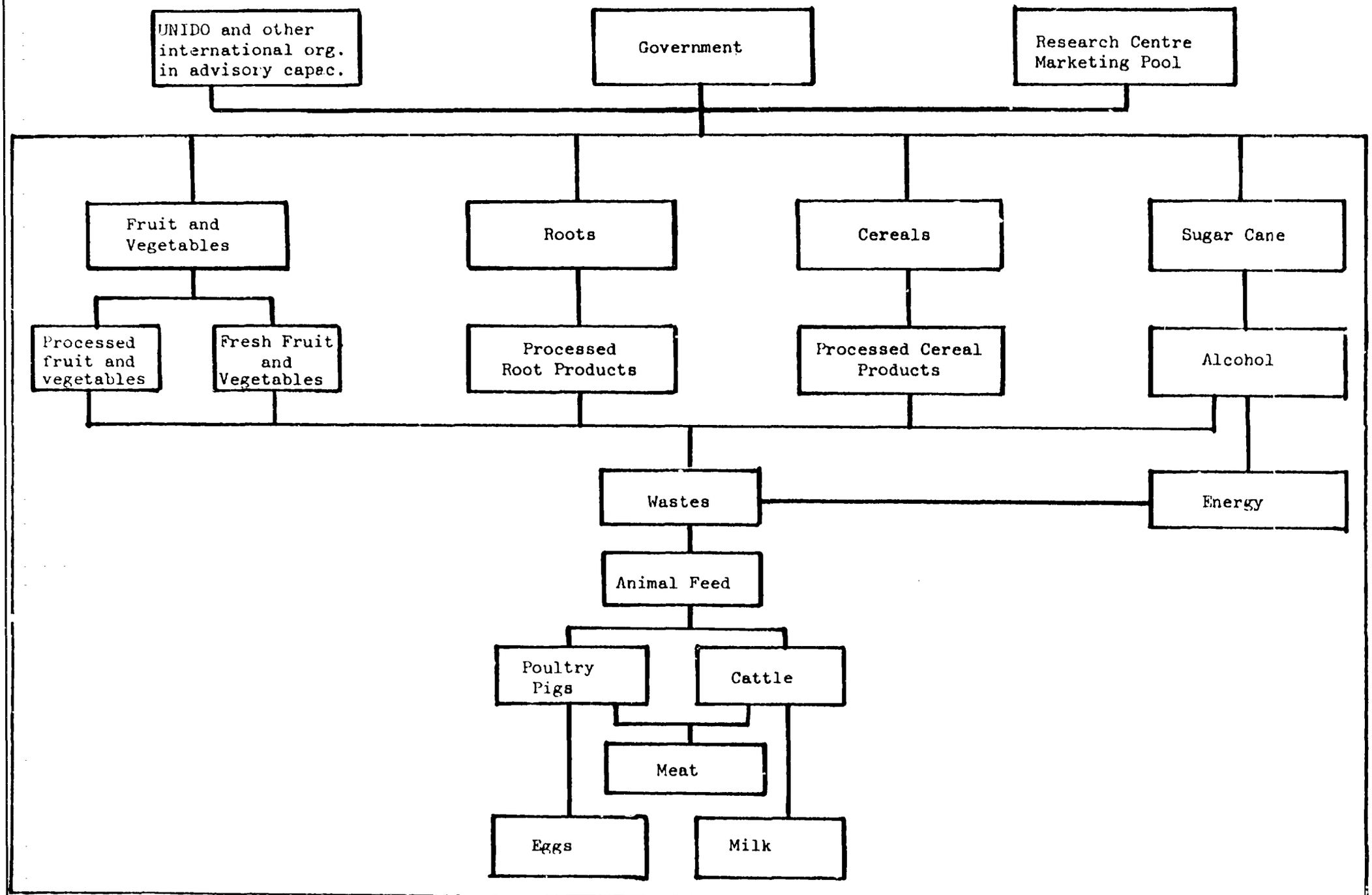
In the attached diagram (page 12), a model complex is shown which comprises fruit and vegetables, roots, cereals, sugar cane, production of energy from sugar cane etc. However, there are small types with other basic production lines and different sources of energy.

It is a very simplified model[6/] which is presented only with the aim of having a visual element to help in the discussions on the best way to plan agro-industry development in developing countries.

Although in planning integrated agro-industries, the aspects of financial and economic viability is highly important, the social aspect is also essential. In promoting agro-industry development, basic considerations should be given to decentralizing the economy. This aspect of creating attractive employment opportunities in the rural areas is one of the most important political and social elements to be taken into consideration. One of the greatest problems in developing countries, is the exodus of the rural population to the cities and the experiences in many developed countries shows that in order to keep the population in the rural areas, it is essential to establish industrial activities which permit higher incomes and greater opportunities to progress by means of higher labour specialization. To this aspect of a social nature should be added the transportation costs which actually are prohibitively high and should be reduced to the essential minimum. Therefore processing should be carried out as close as possible to the raw materials production site and whenever possible agro-industry should produce its own energy.

The above integration with the minimum distance between production of agricultural raw materials and its processing also is beneficial with respect to the quality of final products, and helps to minimise wastes. The production network should be directly connected with a marketing pool.

6/ UNIDO is planning an exercise with the objective of describing a basic number of complexes based on real data or information on available equipment (from the smallest to the largest); productivity levels of agriculture (also minimum and maximum); employment and other basic inputs. From the basic models a system analysis would be made to identify all possible cominations of inputs describing balanced agro-industry complexes.


UNIDO and other international org. in advisory capac.
Government
Research Centre Marketing Pool
Fruit and Vegetables
Roots
Cereals
Sugar Cane
Processed fruit and vegetables
Fresh Fruit and Vegetables
Processed Root Products
Processed Cereal Products
Alcohol
Wastes
Energy
Animal Feed
Poultry Pigs
Cattle
Meat
Eggs
Milk

With respect to technology, it is an essential and difficult aspect to be considered in integrated agro-industry development. Even in the U.S.A., a recent survey indicated that industry was loosing its competitiveness due to the lack of technological innovation and that almost all industry was looking to a new technological pattern in order to progress. To select the most adequate technology, to adjust equipment to the local needs and to keep abreast with innovations requires specialized expertise. Therefore, a minimum nucleus of research and development with an information centre is essential to the success of an integrated agro-industry, which should also be equipped to take the benefits of technical assistance available from international organizations such as UNIDO.

It appears to us that large scope exists here for a programme of co-operation among developing countries. In order to clarify this aspect we should mention the "Planeamiento y Organization del Programa Coordinado de Investigacion Sobre la Industrializacion del Banano" which is being carried out under the Union de Paises Exportadores de Banano (UPEB). It concerns a concept which is one of the more intelligent and well-conceived programmes of research and development. The production of bananas is an activitiy which is entirely carried out in developing countries and it is highly justifiable that developing countries should concentrate efforts on solving problems of industrialization of large quantities of bananas which are actually being wasted every year. In addition several institutes were carrying out isolated research with many overlapping exercises. The programme starting from a wide assessment of research findings and also of the available research facilities in the UPEB countries is now being implemented through a co-ordinated research and development programme which by means of concentrating efforts should be beneficial to all the countries concerned. Similar exercises should be stimulated with respect to other foods of interest to developing countries.

Integrated agro-industry, although being market-oriented and aiming at being a profit-making organization, should also perform a social duty producing staple foods which are not the most profitable production lines.

An important role should also be played by the integrated agro-industries in helping to change consumption habits. Taking into account that a large component of the developing countries' population are young people, a concentrated effort should be made to direct them towards new foods which can be easily produced on an industrial basis[7/].

Therefore, the integrated agro-industry should have the Government's support by means of providing infra-structure services, financial resources, assistance to food programmes aimed at schools and other institutions and basic protecting and stimulating legislation.

Finally, although not indicated in the diagram (page 12), the model should be connected with a large system comprising the production of packaging materials, containers, means of transportation and distribution of processed foods.

V. CONCLUSIONS

"Actually a large portion of the world's food supply is traded rather than nationally produced, the food chain is lengthening, and if stocks drop to 45 day's worth, that chain begins to break."

"The future looks grimmer. Developing countries are already importing over 80 million tons of cereals; by the end of this century they will have to double their food production and treble their imports."

"The growth in the developing countries food production is actually slowing down, the number of seriously malnourished people is rising (it is 450 million today) and food imports whoever pays for them, are getting close to exceeding world supply.

The developing countries, many of them importing half their food, also face a $60,000 million oil bill in 1980. Recession in the West is shrinking their markets. Their current account deficits this year will be around $70,000 million."

The above quotes are taken from a daily newspaper and almost every day similar statements can be read in magazines and studies, all over the world. There is no exaggeration. Food production needs to increase and fundamental changes are needed.

7/ There are countries in which beans are the basic protein staple food. However due to an increase in consumption such countries are having continuous problem of shortage. To increase bean production requires an increase in productivity and also the development of a new bean species which imply genetical changes which is a long-term programme. Therefore it would be beneficial to change the habits and to introduce new foods especially based on soya as a raw material.

In the development programmes of developing countries the need for agrarian reform has been very much emphasized. The main aspect which was pointed out in such programmes was the land tenure with the claim that land should belong to whoever works it. It appears to us that a completely new approach should be aimed at. The main objective of any programme should be the production - to mobilise all available resources to obtain the optimum result and to reduce to a minimum, wastes.

Most of the developed countries are implementing large programmes to rationalize the use of land. In the U.S.S.R. the basic trend is called amalgamation in which the farms are merged with larger ones to allow the use of more modern production methods and most of them are linked with processing facilities which operate with the aim of increasing the shelf-life of the produce, reducing wastage and making possible better use of the by-products.

A large amount of resources are also being spent in the U.S.A. and other countries on agronomy research to make genetic changes with the aim of creating new species which are more economical and more productive.

It seems that there is no alternative to agro-industry development. It is very much needed and provides an opportunity for developing countries to reduce dependency on imports and to create a new economic and social basis in the rural areas.

In previous sections of this paper we gave the basic guidelines on the establishment and organization of integrated agro-industry. The linkages between the basic production lines were pointed out. However we restricted our presentation to the technical aspects of the complexes. There is however another basic aspect to be considered regarding the type of organization - should it be a co-operative, a completely integrated organization or a type of arrangement made under contract between farmers and industry. It appears to us that any type could work and the one which is more in accordance with the country's socio-economic set-up should be selected.

Agro-industry development is a problem which affects most of the developing countries, therefore, to speed-up the process should be a common objective. A combined programme should be envisaged in which a combined effort should be made in order to create the basis

for an exchange of experience and also a co-ordinated policy. It is well known that over production of food products induces a lowering of the prices on the international market and cases such as sugar production and export from developing to developed countries at prices lower than cost should be avoided. This represents a subsidy from the poor to the rich.

It is also well known that agriculture is the most traditional production sector and very much resistant to socio-economic changes. Integrated agro-industry development should be used to promote basic socio-economic changes and as an avenue to bring to the rural areas modern management and application of scientific production methods.

A few considerations on how the world will be in the year 2000 could end this paper with the message that an international effort should be made to promote agro-industry development. Specifically, the projections made for the U.S.A. Government in Global 2000 Report[8/] indicates that:

"The world will be much more crowded than today's with fewer resources per person and vastly higher real costs of the necessities like food and energy."

"Every major natural resource on which life depends - forests, fisheries, fresh water, top-soil and arable land - will be strained to or beyond its breaking point".

"Genetic rescurces - essential for maintaining the flexibility of plants and animals to respond to disease and climate change and for breeding higher-yield crops on which future food supply depends - may be damaged most severely for all."

Unfortunately, the phrase "Year 2000" has a distant cosmic ring to it. However, the year 2000 is in the near future and that should make one aware of the urgent need for an international effort to alter the grim predicted future.

8/ The Guardian, 3 August 1980, page 15.

TABLE I

ANGOLA FOOD PRODUCTION, 1973 - 1979

Products (1)	Prod. 1973 (2)	Prod. 1977 (3)	Prod. 1978 (4)	Prod. 1979 (5)	Percentage (5/2)	(5/3)	(5/4)
Conserves (kg.)	119,603	64,954	67,571	77,509	65	119	115
Soft drinks (kg.)	49,252	20,186	24,944	23,984	49	133	96
Alcoholic bev.(kg.)	13,620	3,070	2,714	5,572	41	181	205
Liqueurs	5,419	2,067	3,277	2,346	43	123	72
Vegetable oil (kg)	13,307	4,482	7,038	4,095	31	90	58
Margarine (ton)	2,809	984	2,443	2,351	84	246	96
Soap (ton)	18,400	5,676	9,274	5,116	28	90	55
Macaroni (ton)	8,935	4,849	6,343	4,709	53	97	74
Biscuits (ton)	3,132	1,486	2,386	2,525	81	170	106
Wheat flour (ton)	82,925	39,107	52,537	47,140	57	119	90
Corn flour (ton)	59,050	24,596	32,488	61,069	103	262	188
Yeast (ton)	2,282	1,453	1,499	512	22	35	34
Tinned meat (ton)	5,263	949	864	427	8	45	49
Tinned fruit (ton)	6,592	1,403	2,960	2,435	37	77	82
Concentrates (ton)	1,762	860	252	1,456	83	45	578
Vinegar (ton)	972	224	178	26	3	11	15
Sugar (ton)	81,905	38,071	36,079	31,843	39	87	88
Salt (ton)	8,126	1,894	4,014	4,447	55	233	111
Total					54	122	102